

VARIABLE-GAIN LOW NOISE AMPLIFIER TO REDUCE LINEARITY REQUIREMENTS ON A RADIO RECEIVER

ABSTRACT OF THE INVENTION

5 Variable gain low noise amplifier (LNA) system to reduce linearity requirements
on a radio receiver. In the receiver, the LNA is coupled to receive an RF signal and
produce an amplified signal at an LNA output. The receiver also comprises a VGA
coupled to the LNA output to receive the amplified signal and produce a VGA output to
downstream components of the receiver. The receiver also comprises a control network
10 coupled to the LNA and the VGA. The control network operates to adjust gain factors of
the continuously variable LNA and the VGA based on a received power indicator of the
RF signal, so that a signal-to-noise ratio required for demodulation of the RF signal is
met with a selected margin and the linearity requirements of the receiver are reduced.